AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

1. (Previously Presented) A photoreceptor, comprising:

an electroconductive substrate;

a charge generation layer located overlying the electroconductive substrate with an intermediate layer therebetween; and

a charge transport layer formed overlying the charge generation layer using a non-halogenated solvent and comprising a charge transport material and a resin;

wherein the charge generation layer comprises

a polyvinyl acetal resin, and

a charge generation material having an average particle diameter less than a roughness of a surface of the intermediate layer, on which the charge generation layer is located;

wherein the average particle diameter of the charge generation material is not greater than 0.3 μm and not greater than 2/3 of the roughness of the surface of the intermediate layer;

wherein the charge generation material is a titanyl phthalocyanine;

wherein the titanyl phthalocyanine has an X-ray diffraction spectrum according to Figure 13 when a Cu-Kα X-ray having a wavelength of 1.542 Å is used.

2-6. (Cancelled)

7. (Previously Presented) The photoreceptor according to claim 1, wherein the charge generation layer is formed by coating a coating liquid comprising a dispersion which is

prepared by dispersing the titanyl phthalocyanine so as to have a particle diameter distribution such that an average particle diameter is not greater than 0.3 μm and a standard deviation is not greater than 0.2 μm and then filtering the dispersed titanyl phthalocyanine liquid with a filter having an effective pore size not greater than 3 μm.

8. (Previously Presented) The photoreceptor according to claim 1, wherein the titanyl phthalocyanine in the charge generation layer is prepared by subjecting a titanyl phthalocyanine which has either an irregular form or a low crystallinity and has a primary particle diameter not greater than 0.1 μm and which has an X-ray diffraction spectrum in which a maximum peak having a half width not less than 1° is observed at a Bragg (2θ) angle of from 7.0° to 7.5° (± 0.2°) when a Cu-Kα X-ray having a wavelength of 1.542Å is used, to a crystal conversion treatment using an organic solvent in the presence of water to form a crystal-changed titanyl phthalocyanine, and then subjecting the crystal-changed titanyl phthalocyanine to a filtering treatment before the crystal-changed titanyl phthalocyanine has an average primary particle diameter not less than 0.3 μm.

9. (Previously Presented) The photoreceptor according to claim 1, wherein the charge transport layer further comprises a polycarbonate resin having at least a triaryl amine structure in at least one member selected from the group consisting of a main chain, a side chain and a combination thereof.

10. (Original) The photoreceptor according to claim 1, further comprising:

a protective layer located overlying the charge transport layer.

11. (Original) The photoreceptor according to claim 10, wherein the protective layer comprises an inorganic pigment having a resistivity not less than 1 x 10^{10} $\Omega \cdot$cm.

12. (Previously Presented) The photoreceptor according to claim 11, wherein the inorganic pigment is a material selected from the group consisting of alumina, titanium oxide and silica.

13. (Original) The photoreceptor according to claim 12, wherein the inorganic pigment is α-alumina.

14. (Original) The photoreceptor according to claim 10, wherein the protective layer comprises a charge transport polymer.

15. (Original) The photoreceptor according to claim 1, wherein a surface of the electroconductive substrate is subjected to an anodic oxidation treatment.

16. (Original) The photoreceptor according to claim 1, wherein the non-halogenated solvent is a solvent selected from the group consisting of cyclic ethers and aromatic hydrocarbons.

17. (Previously Presented) An image forming apparatus, comprising:

at least one image forming unit comprising:

an image bearing member;

a charger configured to charge the image bearing member;

a light irradiator configured to irradiate the image bearing member with light to form an electrostatic latent image on the image bearing member;

an image developer configured to develop the electrostatic latent image with a developer comprising a toner to form a toner image on the image bearing member; and

a transfer device configured to transfer the toner image onto a receiving material,

wherein the image bearing member is the photoreceptor of according to claim 1.

18. (Original) The image forming apparatus according to claim 17, comprising plural image forming units.

19. (Previously Presented) The image forming apparatus according to claim 17, wherein the light irradiator comprises at least one member selected from the group consisting of a light emitting diode, and a laser diode.

20. (Original) The image forming apparatus according to claim 17, wherein the charger is either a contact charger or a proximity charger which comprises a charging member charging the image bearing member while a gap is formed between the charging member and the image bearing member.

21. (Original) The image forming apparatus according to claim 20, the charger being a proximity charger, wherein the gap is not greater than 200 μm.

22. (Original) The image forming apparatus according to claim 20, wherein the charging member applies a DC voltage overlapped with an AC voltage.

23. (Previously Presented) A process cartridge, comprising:

the photoreceptor according to claim 1; and

at least one member selected from the group consisting of a) a charger configured to charge the photoreceptor, b) a light irradiator configured to irradiate the photoreceptor with light to form an electrostatic latent image on the photoreceptor, c) an image developer configured to develop the electrostatic latent image with a developer comprising a toner to form a toner image on the photoreceptor and combinations of a), b) and c).

24. (Withdrawn) A method for manufacturing a photoreceptor comprising:

preparing a charge generation layer coating liquid comprising a dispersion of a titanyl phthalocyanine having a particle diameter distribution such that an average particle diameter is not greater than 0.3 μm and a standard deviation is not greater than 0.2 μm and a polyvinyl acetal;

filtering the charge generation layer coating liquid with a filer having an effective pore size not greater than 3 μm;

coating the charge generation layer coating liquid overlying an electroconductive substrate optionally with an intermediate layer therebetween to form a charge generation layer thereon; and

coating a charge transport layer coating liquid comprising a charge transport material, a resin and a non-halogenated solvent on the charge generation layer to form a charge transport layer thereon,

wherein the charge generation material has an average particle diameter less than a roughness of a surface of either the electroconductive substrate or the intermediate layer, on which the charge generation layer is located.

25. (Withdrawn) The method according to claim 24, wherein the charge generation layer coating liquid preparing step comprises:

subjecting a titanyl phthalocyanine which has either an irregular form or a low crystallinity and has a primary particle diameter not greater than 0.1 μm and which has an X-ray diffraction spectrum in which a maximum peak having a half width not less than 10 is observed at a Bragg (2θ) angle of from 7.0° to 7.5° (± 0.2°) when a Cu-Kα X-ray having a wavelength of 1.542Å is used, to a crystal conversion treatment using an organic solvent in the presence of water to form a crystal-changed titanyl phthalocyanine;

then subjecting the crystal-changed titanyl phthalocyanine to a filtering treatment before the crystal-changed titanyl phthalocyanine has an average primary particle diameter not less than 0.3 μm; and

preparing a charge generation layer coating liquid comprising the crystal-changed titanyl phthalocyanine having a particle diameter distribution such that an average particle diameter is not greater than 0.3 μm and a standard deviation is not greater than 0.2 μm and a polyvinyl acetal.

26. (Withdrawn) The method according to claim 24, wherein the non-halogenated solvent is a solvent selected from the group consisting of cyclic ethers and aromatic hydrocarbons.

27. (Cancelled)

28. (Currently Amended) A photoreceptor, comprising:

an electroconductive substrate;

a charge generation layer located overlying the electroconductive substrate with an intermediate layer therebetween; and

a charge transport layer formed overlying the charge generation layer using a non-halogenated solvent and comprising a charge transport material and a resin;

wherein the charge generation layer comprises

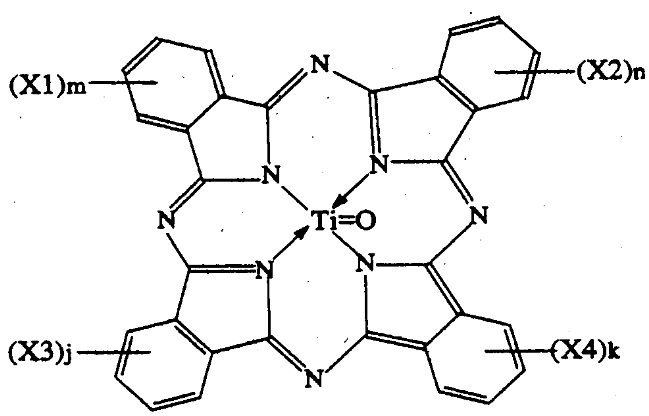
a polyvinyl acetal resin, and

a titanyl phthalocyanine, as charge generation material, having an average particle diameter less than a roughness of a surface of the intermediate layer, on which the charge generation layer is located,

wherein the titanyl phthalocyanine has an X-ray diffraction spectrum according to Figure 13 when a Cu-Kα X-ray having a wavelength of 1.542 Å is used;

wherein the average particle diameter of the charge generation material is not greater than 0.3 μm and not greater than 2/3 of the roughness of the surface of the intermediate layer; and

wherein said titanyl phthalocyanine is represented by formula (1)



(1)

wherein X1, X2, X3 and X4 independently represent a halogen atom, and m, n, j and k are ~~independently~~ 0 ~~or an integer of from 1 to 4~~.

29-31. (Canceled)

32. (Previously Presented) A photoreceptor, comprising:

an electroconductive substrate;

a charge generation layer located overlying the electroconductive substrate having no intermediate layer therebetween; and

a charge transport layer formed overlying the charge generation layer using a non-halogenated solvent and comprising a charge transport material and a resin;

wherein the charge generation layer comprises

a polyvinyl acetal resin, and

a charge generation material having an average particle diameter less than a roughness of a surface of the electroconductive substrate, on which the charge generation layer is located;

wherein the average particle diameter of the charge generation material is not greater than 0.3 μm and not greater than 2/3 of the roughness of the surface of the electroconductive substrate;

wherein the charge generation material is a titanyl phthalocyanine;

wherein the titanyl phthalocyanine has an X-ray diffraction spectrum according to Figure 13 when a Cu-Kα X-ray having a wavelength of 1.542 Å is used.

33. (Currently Amended) A photoreceptor, comprising:

an electroconductive substrate;

a charge generation layer located overlying the electroconductive substrate having no intermediate layer therebetween; and

a charge transport layer formed overlying the charge generation layer using a non-halogenated solvent and comprising a charge transport material and a resin;

wherein the charge generation layer comprises

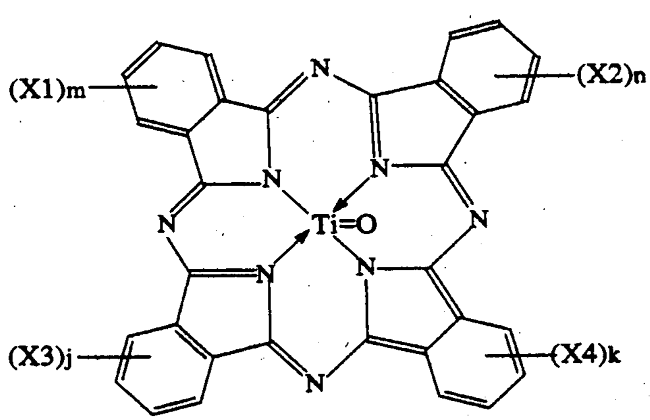
a polyvinyl acetal resin, and

a titanyl phthalocyanine, as charge generation material, having an average particle diameter less than a roughness of a surface of the electroconductive substrate, on which the charge generation layer is located,

wherein the titanyl phthalocyanine has an X-ray diffraction spectrum according to Figure 13 when a Cu-Kα X-ray having a wavelength of 1.542 Å is used;

wherein the average particle diameter of the charge generation material is not greater than 0.3 μm and not greater than 2/3 of the roughness of the surface of the electroconductive substrate; and

wherein said titanyl phthalocyanine is represented by formula (1)



(1)

wherein X1, X2, X3 and X4 independently represent a halogen atom, and m, n, j and k are ~~independently~~ 0 ~~or an integer of from 1 to 4~~.